

**UK Patent Application** (19) **GB** (11) **2 211 088** (13) **A**  
(43) Date of A publication 28.06.1989

(21) Application No 8724609.6

(22) Date of filing 21.10.1987

(71) Applicant  
**Helios Limited**

**(Incorporated in the United Kingdom)**

**4 Heybank Road, Disley, Cheshire, SK12 2BJ,  
United Kingdom**

(72) Inventor  
**C H Gardiner**

(74) Agent and/or Address for Service  
**Marks & Clerk  
Suite 301, Sunlight House, Quay Street, Manchester,  
M3 3JY, United Kingdom**

(51) INT CL'  
**A61G 9/00**

(52) UK CL (Edition J)  
**A4N N21**

(56) Documents cited  
**GB 2083762 A GB 1271424 A EP 0142950 A2  
WO 86/01098 A1**

(58) Field of search  
**UK CL (Edition J) A4N, A5R RCE  
INT CL' A61F, A61G**

(54) **Disposable vessel for human body wastes**

(57) A disposable vessel for human body waste products is made of a material which is cold water insoluble but soluble in water above the temperature of human body waste products. The vessel, which may be a liner vessel for a bed pan or urine bottle, may be made of polyvinyl alcohol. The vessel may be disposed of by treatment with water at a temperature above that at which it dissolves, and maceration to promote dissolution.

IMPROVEMENTS RELATING TO DISPOSABLE VESSELS

The present invention relates to disposable vessels for human body waste products.

Bed ridden, handicapped and disabled people in hospitals or nursing homes require the use of a urine bottle and/or bed pan for self evident reasons. Cleaning of such utensils by washing and/or sterilisation is in certain conditions unsatisfactory and it is known that infectious diseases can be spread by this means.

An alternative in widespread use is for the urine bottle and bed pan to have a liner of or be made from paper pulp which is disposed of along with its contents via a macerator which typically has a rotary cutting element and a high pressure water spray to soften the container and aid flushing to drain.

These containers are however comparatively expensive, bulky to transport and store, can be unpleasant for patient and nursing staff and the bulk of pulp waste is a continual source of machine and drain blockages. The disposal machines are bulky, noisy (prohibiting use at night) and liable to misuse.

It is an object of the present invention to obviate or mitigate the above mentioned disadvantages.

According to a first aspect of the present invention there is provided vessel for human body waste products, the vessel being comprised of a material which is cold water insoluble but soluble in water above the temperature of human body waste products.

The vessel may for example be a liner vessel for a urine bottle or bed pan. The invention thus also provides the combination of a urine bottle or a bed

pan and such a liner vessel.

Alternatively the vessel may be such as to be usable as the urine bottle or bed pan per se, without additional support of a surrounding container.

The vessel is most preferably water soluble only above 65°C. For preference the vessel is of plastic material, particularly polyvinyl alcohol. The vessel may be of any conventional shape as used for bed pans or urine bottles or the liners thereof.

The fact that the vessel is cold water insoluble means that it is not deleteriously affected by body waste products but nevertheless may be dissolved in hotter water (for example as detailed below) for easy disposal to drain.

The vessel thus provides a means of waste disposal which is clinically clean (eliminating risk of cross infection) and which is easier to dispose of than the conventionally used vessels. There may also be cost advantages in the use of the liners.

The invention also provides a method of disposing of the vessel comprising treating the used vessel with water at a temperature at which the vessel will dissolve, preferably with maceration of the vessel to promote dissolution.

A disposal machine for carrying out the above method may comprise a rotary cutting head for maceration and a means of adding water in which the temperature has been or will be raised to the required level.

The sequence of operation could be as follows:

1. The vessel would be used as or put inside any bed pan or urine bottle as required for use by the patient.
2. Such used vessel to be placed in the disposal unit and the start sequence initiated.

3. The machine will sense:
  - a) Water level in head tank or supply pressure, max and min
  - b) Pressure in the drain manifold
  - c) Lid closed and locked. (Should remain so until after 5)
4. A timer will initiate sequence.
  - a) Heater will raise temperature of water in any calorifier or sense temperature of available supply
  - b) When temperature correct, secondary pump will spray hot water into the macerator chamber where all interior surfaces will be flushed
  - c) After a short delay, the rotary cutter will commence breaking up vessel and contents which should be completely clear in say 30 seconds
  - d) The heater will switch off and the cutters continue to rotate with the flushing water now at ambient temperature for a further few seconds
5. Any drain blockage or water shortage will cancel any of the above pending investigation and reset - otherwise cycle will continue and reset after a given period of time
6. A "STOP" control would override any of the above  
It is envisaged that the disposal system will be less costly, easier to install, run and maintain, require less space, be quiet in operation, and less liable to misuse than conventionally used disposal units.

- 4 -

**POOR  
QUALITY**CLAIMS

1. A vessel for collecting human body waste products, the vessel being comprised of a material which is cold water insoluble but soluble in water above the temperature of human body waste products.

2. A vessel as claimed in claim 1 which is a liner vessel for a urine bottle or bed pan.

3. A vessel as claimed in claim 1 which is a self supporting urine bottle for bed pan.

4. A vessel as claimed in any one of claims 1 to 3 which is water soluble only above 65°C.

5. A vessel as claimed in any one of claims 1 to 4 which is comprised of polyvinyl alcohol.

6. The combination of a liner vessel as claimed in claim 2 or in claim 4 or 5 when dependent from claim 2 and a urine bottle or bed pan.

7. A method of disposing of a vessel as claimed in any one of claims 1 to 5 comprising treating the used vessel with water at a temperature at which the water will dissolve.

8. A method as claimed in claim 7 additionally comprising macerating the vessel to promote dissolution.

9. A disposal machine for carrying out the method of claim 7 comprising a rotary cutting head for maceration and means for adding water in which the temperature has been or will be raised to the required level.

10. A vessel for human body waste products substantially as hereinbefore described.

11. A method of disposing a vessel substantially as hereinbefore described.

12. A disposal machine substantially as hereinbefore described.

**THIS PAGE BLANK (USPTO)**